

Pennsylvania's Rare Collections Library Design Overview (Non-Technical)

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The Client

The State Library of Pennsylvania owns a nationally significant, unique and invaluable rare books collection. These holdings include the volumes purchased by Benjamin Franklin in 1745 for use by the first legislative body of Pennsylvania. Among them are the works of John Locke, whose influence permeates the Declaration of Independence, inspiring the immortal phrase, "Life, Liberty and the Pursuit of Happiness." Additional holdings include Franklin's *Pennsylvania Gazette* and important Pennsylvania imprints and publications recording and describing Pennsylvania's role in the Underground Railroad, the Civil War, the Industrial Revolution and many other pivotal moments in our nation's history and heritage. This historic collection is comprised of books, manuscripts, pamphlets, maps and newspapers. One of the greatest challenges any library with an historic collection can undertake is promoting the use of such materials while safeguarding them for future use. In Pennsylvania's case, the library also needed a healthier environment for staff and patrons who would be working with the rare collections. To accomplish this, the State Library initiated a proactive preventative conservation initiative to ensure the collection's survival, as well as to enhance the collection's usefulness and access by patrons. The result of this initiative was the building of the new Rare Collections Library within the State Library's existing historic facility.

Design Concept

All possible components essential for creating a preservation-based environment that is both affordable and protective of paper-based collections were included in this project. Specific concerns that were addressed include: temperature, humidity, security, fire detection, fire suppression, lighting, housing materials, environmental controls, and energy consumption.

The major culprit in the deterioration of this invaluable collection has been the lack of environmental control. The damage sustained over the past 250 years due to drastic climate fluctuations remains an on-going concern and problem. Every possible consideration has been given to eliminating damaging environmental effects in the housing of the collection in both the storage areas and public spaces where the collections will be viewed and used.

The Rare Collections Library is designed to preserve the individual items and the collections as a whole, extending their useable life until future technologies can offer additional solutions. The design concept is supported by current research that paper-based collections survive longer when

kept in low to zero light, free of biological, particulate and gaseous pollutants, at controlled, constant temperatures and relative humidity, with minimal influences from support spaces.

The financial ability to maintain the required design standards for the long-term protection of the collection is an ever-pressing demand and was given considerable attention during the design phase, because proper and consistent maintenance is critical. High maintenance costs and/or exotic equipment were not an option. Special consideration was incorporated into the design of the many different systems so that, in the future, when any one of the systems is decommissioned and/or in need of replacement, such action can be taken without disruption of the collection or degradation of the environment that particular system serves.

Design Standards

The preservation standards for this project are based on the holistic approach that an integrated whole has a reality independent of and greater than the sum of the individual parts of the environment. This allows for a more sensitive, efficient, and therefore more cost effective, approach to preventative conservation. Integrating this concept into the initial stages of design allows the building truly to act as the collections' first and last line of defense against both the agents of rapid degradation and the ever-pressing natural deterioration of such materials. Today, technology has improved to the point that specialized environments can be designed for the preservation of unique and rare collections as well as of general use, paper-based collections. All of the different factors, including chemical, pollutant-induced, light-induced, biological, physical, temperature, humidity, etc., which constitute the environment can be influenced in a positive manner like never before. The design and the creation of such environments can be done in an affordable, long-term, cost-conscious manner, which will ensure the useful longevity of collections for future generations. Each area within the Rare Collections Library has specific design standards based on the collection it houses (newspapers as opposed to books, for example) and the specific function of the spaces. It is important to this concept that each individual space support the adjoining space to help maintain the optimal environment and minimize the influences of environmental factors outside the Rare Collections Library.

Physical Context

An important design consideration was the actual space allocated for the new Rare Collections Library. Early in the design process, it was decided that maintaining the facility within the existing, obsolete, historic library building would be more advantageous to the collection's survival by helping to keep the collection intact as a whole, accessible and protected. This approach would create less physical stress to the collection than the numerous moves which would be required otherwise.

It was decided to maintain the State Library of Pennsylvania's Rare Collections Library within the Forum Building, a Neo-Classical, Art Deco building constructed between 1929 and 1931. This obsolete, historic building (which once housed the Department of Education) is located in the Harrisburg Capitol Complex. A strong application for placing the Capitol Complex on the National Register of Historic Places has been submitted, as the main Capitol Building was designated a historic landmark in November 2007. The Forum Building consists of a steel structure encased in concrete, finished in plaster, marble, and/or wood paneling on the interior, and clad in limestone and granite on the exterior. Original, vertical separation partitions of the

building consist of either brick or clay tile encased in many different finishes. The structure was primarily designed and built utilizing cross ventilation principles, leaving the building with a negative pressure and a sizable outside-air infiltration. All of the building's mechanical systems are either outdated, obsolete or in a state of failure. The Forum Building does not have a central HVAC system. The current heating system is over 75 years old, and hazardous materials (asbestos, lead, PCB, etc.) were used extensively, a common practice in construction during this time period.

Since the 1970s, the most at-risk materials (as understood at the time) in the State Library's collection were located in a second-floor office space with a halon fire suppression system (previously the only fire suppression system in the building). A security system linked to the Capitol Police and window air conditioners running in coordination with portable dehumidifiers were the only protection from environmental influences. As the design for the new facility was being developed for construction on the ground and lower-level floors, the rare book collection remained in its previous environment, but was cleaned, inventoried and made ready for the move to new storage/housing areas. The newspaper collection had been housed in ground-floor shelving areas and was inventoried, wrapped, identified and made ready for the move to the new newspaper repository constructed on the lower level. Concurrently, the Pennsylvania Newspaper Project, funded by an IMLS grant, was moving into its final phase. The State Library, in partnership with Pennsylvania State University libraries, collected historic runs of Pennsylvania newspapers and brought them to the State Library for preservation. The housing capacity of the new newspaper repository was increased considerably to accommodate this major addition to the collection.

Currently, library staff members reach stack areas using antique elevators that are original to the building, retrieve books with equally aged book elevators and push loaded carts through tight materials storage quarters served by ineffective lighting. Dehumidifiers are located throughout the stacks in a futile attempt to control relative humidity, especially during the hot and humid Harrisburg summers. There is no humidification control during winter months, when the relative humidity can drop to 3%. The library's staff work constantly to compensate for the building's inefficiencies and poor environment, not unlike many such facilities with similar collections in older buildings. However, no matter how hard the staff work to facilitate these issues, it is and always will be a losing battle until a proper facility is provided.

Library Context

The library has stewardship of over four million items. The Main Library is located in the opposite wing of the Forum Building to the location of the Rare Collections Library and houses extraordinary research materials – both paper and electronic. The Library has moved forward with public access internet computers; on-line databases; off-site access to data bases, which has proven especially useful for all government agencies; and digitization of historic materials now available on its website. Unfortunately, these advancements have been at the expense of care for the many historic artifacts housed within the Library which have been left to their certain demise until the creation of the new Rare Collections Library. Because the State Library of Pennsylvania is identified by statute as a Statewide Library Resource Center, the Interlibrary Loan staff processes large amounts of microfilm and paper copies of materials for Pennsylvania

public libraries, state hospitals, correctional institutions, and academic libraries and provides materials to fill requests from libraries nationwide. The information delivery systems work quite efficiently in spite of the building's obsolete systems.

The Main Library contains an outstanding genealogy collection that is particularly notable for Pennsylvania families, and is a worldwide resource. Genealogists often plan vacations to Harrisburg that include days for research at the State Library. The newspaper collection is especially useful for obituaries and news stories that support or debunk tales that have been passed down through generations. Many of these materials have become fragile from age and use and need protective environments and appropriate housing.

Within the State Library holdings is a unique collection of printed materials from the time of the American Civil War through Reconstruction, the opening of the West, the Age of Industrialization and the Robber Barons, American Imperialism and World War I. This collection includes volumes printed on wood pulp paper that is deteriorating faster than the older, rag paper collections. These items are being pulled from the regular collection, evaluated, and provided with better environmental protection to increase their useful life span.

The Law Library within the State Library of Pennsylvania (once deemed the premier Law Library in our nation) has served the legislature and the residents of the Commonwealth for three generations. The Law Library is the main depository for state and federal documents and includes holdings that trace legal decisions from Pennsylvania's colonial period to present day. The Law Library holdings are adjacent to the recently constructed Newspaper Repository, the Reading Room and with holdings above the new Rare Books Vault and Reading Room.

Preservation's Role in Expanding Access

It is understood that historic, paper-based collections need to be housed in special environments in order to slow their natural degradation. Equally important to environmental control is the controlled and limited access of the collection so that the usable life of the collection can be extended for the longest possible time, thus allowing future generations access to these documents for research and interpretation.

After the collection environments are stabilized and verified as benign, and the collections are properly placed within the new environment, it becomes the responsibility of the Rare Collections Library staff to protect the collections from the many forms of mechanical damage which are introduced through the improper handling of such documents/artifacts.

The optimum location for the collection's long-term survival is in individually designed housing/storage areas based on the collection needs. These storage areas are designed specifically for the collection's preservation and not for the comfort of the staff or patrons, whereas the public spaces and reading room are designed for patron comfort rather than the preservation of the collections. This philosophy is evident in the minimal amount of display shelving/cases included in the public areas and the Reading Room. Display cases allow for rotation of displays of unique and rare items under very controlled conditions, but not for extended display or storage. Cataloging of all historic documents is completed and verified before moving them into the vault or repository, thus reducing the need for any unnecessary

intrusions into the “place of the book,” helping to maintain the special environmental conditions necessary for the long-term preservation of the collections. Use and handling by the stewards of the collection become all the more important for the long-term stability of the collection.

With the inevitable improvements in conservation techniques and emerging technologies, costs for such work will decrease, which will allow more items to be conserved. Funding for such work is always lacking; however, by preserving the collections as a whole, it is expected that when funding does become available, the collections will be in the best possible condition for their conservation. Hopefully, future technology and subsequent cost reductions will open access to materials which are currently too frail to handle.

As digitization techniques improve to a point where they cause no damage to the most vulnerable materials, more and more resources will be available in digital format through the State Library’s website. As financial resources allow, additional materials will be purchased to complete runs of materials or to expand areas of interest. In addition, the State Library will extend the offer to other libraries, historical societies, genealogists and private collectors unable to properly protect their materials to place their collections on permanent loan or to donate them with the confidence the materials will be safe and preserved for generations to come.

Cautions

The human factor –that is, handling and use policies, as well as administration and facilities management – will need to be completely rethought and revised.

Many staff members were unaware of the history of some of the rare collection holdings within the State Library. It is a remarkable story of survival that many of the rare items, including the Pennsylvania Assembly Collection, were once part of the circulating collections in the Main Reading Room of the State Library, able to be checked out by any card holder. Staff will need to be educated about the significance of large portions of the general collection newly identified as rare and valuable, about proper handling, storage and in particular in the use of the most rare collections. For example, procedures are needed for moving materials from one environment to another which allow time for the items to adjust to the change in environment. Staff must also be trained in the correct maintenance of the different environments created for the preservation of the different components of the library. This responsibility will also include a much greater degree of dialog with security, life/safety personnel, and maintenance staff. Without their appreciation for the collections and direct contributions, these environmental systems will fail.

Funding Constraints

The Office of Commonwealth Libraries must work within the annual state appropriation received through the Department of Education. This appropriation supports all aspects of the State Library of Pennsylvania’s personnel, operations, collections and maintenance. The Library does not have a foundation or a Friends organization, nor can it accrue funding from year to year. It “lives” within an annual appropriation of approximately \$3.7 million.

Although specific projects may be included in the Commonwealth’s Capital Budget by the legislature, as with most states, these funds are only released by the Governor after consideration of many, often competing, priorities. With the inevitable changes in governors, state librarians

and state library directors, it becomes critical to institutionalize the priority of preservation and to work to assure adequate funding of the advancements made within the new Rare Collections Library, or these advancements will quickly deteriorate and the collection will again be placed at risk.

Grant and Contribution Funding

In the attempt to secure funding for additional preservation work, the need to seek outside resources and funding became evident. Prior to designing the new Rare Collections Library, the State Library was repeatedly unsuccessful in gaining conservation grant funding because the environment of the collections was itself considered destructive to the collections. After designing the new Rare Collections Library, the State Library was awarded a number of important grants for the protection of its collections. The most significant is a \$250,000 Save America's Treasures matching grant. These funds are being used to conserve approximately half of the 422 volumes of the Pennsylvania Assembly Collection, the collection that began in 1745 by then-Clerk of the Assembly, Benjamin Franklin.

Outcome & Risk

Most libraries in Pennsylvania were built before the 1950s. This is the case with most of the Commonwealth's museums and archives, and is also a common situation in many other states. Therefore, this project has added relevance as it demonstrates how to successfully preserve historic documents within an obsolete, historic building with all the problems inherent in this type of construction project in an aging building. Thanks to Pennsylvania's rich colonial history, many local and county historical societies have valuable local collections. Unfortunately, in the majority of cases, these collections are at great risk. By presenting a model preservation project, whose design process is open for discussion, local facilities can enter into discussions as to how their facilities can make use of this information and maximize their preservation dollars.

Hidden Costs

Any technologically based system is doomed to fail if a maintenance program is not initiated and strictly adhered to. Therefore, maintenance and energy costs must be kept to a minimal level if any project is to be successful. As energy costs are expected to continue to increase, the use of any energy must be fully evaluated and refined for optimum performance at minimal cost. Energy conservation is an important component of preservation. Energy use that negatively impacts the outside environment eventually hampers preservation efforts as it makes it more difficult – meaning more costly – to condition the incoming air to achieve a desirable air quality within the library environment. The impact of poor outdoor air quality is compounded as the facility ages and consumes more and more energy as systems begin to decline.

Staff at all levels must receive proper initial training and be kept current on the systems ability to function as designed. Without attentive, vigilant staff, (library staff, administration, maintenance staff, etc) the many systems put into place for the collection's survival will fail through ignorance. As mechanical equipment starts to fail and its useful life expires, it must be replaced. From the project onset, funds must be appropriated to meet the eventual retirement and replacement of the many mechanical systems/equipment as newer and more efficient systems become available and changes in the ever ongoing maintenance programs are instituted.

In Summary

The Forum Building which houses the State Library of Pennsylvania's Rare Collections Library has served the Commonwealth well, but the building mechanical systems of the 1930s cannot be expected to meet effectively the needs of 21st century library service, particularly when the library holds rare materials of inestimable worth. The new Rare Collections Library has been successful in creating the best possible environment for the preservation of paper-based collections. A beneficial and unplanned project outcome is that this project can now be looked to as a model for the greater library, museum and archives communities who share the concern and need for solidly researched preservation methods and techniques. An important design goal was that no component of the integrated system was to be customized for this project. All components are "off the shelf" to make the application of the design more widely replicable.

Preservation success is short-lived without proper maintenance of systems, continuing education for all levels of staff, and the recognition that building a "rare books room" is not a one-time expenditure. Realistic maintenance and energy costs must be factored into the general operating budget. Energy costs must be controlled and held in check. In doing so, the preservation-based environment need not suffer any decrease in its efficiency; rather, an increase in efficiency must be adhered to. This project makes use of the latest technology available to date. As research in the aging of paper advances, so will the technology to implement those findings. It is realistic to expect that these newer technologies will bring economic efficiencies. It is important to stay current and to share our successes and frustrations; then, as a community, we can advance the collective information about preservation, and together assure that our valuable histories remain intact and accessible to inform, educate and inspire generations to come.